



PATENT APPLICATION

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re the Application of: KIM ET AL.

Group Art Unit: TO BE ASSIGNED

Application No.: 10/688,905

Examiner: TO BE ASSIGNED

Filed: October 21, 2003

Docket No.: 11641/167

For: BIOLOGICAL ASSAYS USING GRADIENTS FORMED IN
MICROFLUIDIC SYSTEMS

INFORMATION DISCLOSURE STATEMENT

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

Pursuant to 37 CFR § 1.56, the attention of the Patent and Trademark Office is hereby directed to the reference(s) listed on the attached PTO-1449s. It is respectfully requested that the information be expressly considered during the prosecution of this application, and that the reference(s) be made of record therein and appear among the "References Cited" on any patent to issue therefrom. The filing of this Information Disclosure Statement and the enclosed PTO Form No. 1449s, shall not be construed as an admission that the information cited is prior art, or is considered to be material to patentability as defined in 37 C.F.R. § 1.56(b). The paragraphs marked below are applicable. It is believed that no fees other than those indicated below are due, but authorization is hereby given to charge any additional fees due, or to credit any overpayment, to deposit account 11-0600.

☒ 1. This Information Disclosure Statement is being filed (a) within three months of the filing date of a national application other than a continued prosecution application under 37 C.F.R. §1.53(d), (b) within three months of the date of entry of the national stage as set forth in 37 C.F.R. § 1.491 in an international application, (c) before the mailing date of a first Office Action on the merits in the present application, OR (d) before the mailing of a first office action after filing of a request for continued examination. No certification or fee is required.

☒ 2. The reference(s) was/were cited by or submitted to the Office in parent application Nos.:


U.S. Patent Application No. 10/097,329 filed March 15, 2002;
U.S. Patent Application No. 10/097,351 filed March 15, 2002;
U.S. Patent Application No. 10/097,306 filed March 15, 2002;
U.S. Patent Application No. 10/097,304 filed March 15, 2002;
U.S. Patent Application No. 10/097,322 filed March 15, 2002;
U.S. Patent Application No. 10/097,302 filed March 15, 2002; and
U.S. Patent Application No. 09/709,776 filed November 8, 2000.

All of which are relied upon for an earlier filing date under 35 U.S.C. §120. Thus, copies of these references are not attached pursuant to 37 CFR §1.98(d).

Respectfully submitted,

KENYON & KENYON

Date: 2/6/04



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Form 1449 INFORMATION DISCLOSURE STATEMENT BY APPLICANT Page 1/3	ATTY. DOCKET NO. 11641/98	SERIAL NO. 10/097,322
	APPLICANT Gregory KIRK et al.	
	FILING DATE March 15, 2002	GROUP 1744

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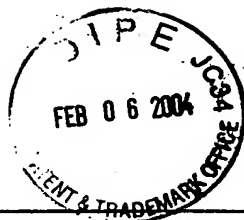
EXAMINER INITIAL	PATENT NUMBER	PATENT DATE	NAME	CLASS	SUBCLASS	FILING DATE*
	6,238,874	05/29/01	Jarnagin et al.			07/28/99
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* - If pertinent

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						YES	NO
	WO 00/07007	02/10/00	US/PCT			N/A	
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* Publication date, unless otherwise indicated



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		"Gradient Micropattern Immobilization of EGF to Investigate the Effect of Artificial Juxtacrine Stimulation", Chen et al.: Biomaterials (2001) pages 2453-2457
		"How to Prepare Tunable Planar Molecular Chemical Gradients", Kirill Efimenko and Jan Genzer: Advanced Materials (2001) vol. 13, no. 20, pages 1560-1563
		"Electroosmotic Properties of Microfluidic Channels Composed of Poly (Dimethylsiloxane)", Ren et al.: Journal of Chromatography B, " (2001) vol. 762, pages 117-125.
		"A Firin or Collagen Gel Assay for Tissue Cell Chemotaxis: Assessment of Fibroblast Chemotaxis to GRGDSP", Knapp et al.: Experimental Cell Research, (1999) vol. 247, pages 543-553.
		"Development and Characterization of an ELISA assay in PDMS Microfluidic Channels", Eteshola et al.: Sensors and Actuators (2001), vol. B72/2, pages 129-133.
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		"Hydrodynamic Effects on Microcapillary Motility and Chemotaxis Assays of <i>Methylosinus trichosporium</i> OB3b", Shonnard et al.: Applied and Environmental Microbiology, (1992) vol. 58, no 9, pages 2737-2743
		"Effect of Cryopreservation on Chemotaxis of Lymphocytes" Abda et al.: Cryobiology (1998) vol. 36, pages 184-193
		"Automated Real-Time Measurement of Chemotactic Cell Motility" Hadjout et al.: BioTechniques (2001) vol. 31, pages 1130-1138
		"Transmembrane Motility Assay of Transiently Transfected Cells by Fluorescent Cell Counting and Luciferase Measurement" C. Battaglia et al., BioTechniques (2000) vol. 29, pages 81-86
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		"Motility and chemotaxis in <i>Serpulina hyodysenteriae</i> " Kennedy et al: Veterinary Microbiology (1996) vol. 49, pages 21-30



**INFORMATION DISCLOSURE
STATEMENT BY APPLICANT
PTO FORM 1449**

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ATTY. DOCKET NO.
11641/96

SERIAL NO.
10/097,302

APPLICANTS
G. KIRK et al.

FILING DATE
March 15, 2002

GROUP
1744

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EXAMINER INITIAL	PATENT/PUBLICATION NUMBER	PATENT DATE	NAME	CLASS	SUBCLASS	FILING DATE*
	6,558,904 B2	May 6, 2003	Ermantraut et al.			

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EXAMINER INITIAL	DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUBCLASS	TRANSLATION	
						YES	NO

OTHER DOCUMENTS

EXAMINER INITIAL	AUTHOR, TITLE, DATE, PERTINENT PAGES, ETC.

EXAMINER

DATE CONSIDERED

EXAMINER: Initial if citation considered, whether or not citation is in conformance with M.P.E.P. 609; draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.



INFORMATION DISCLOSURE STATEMENT BY APPLICANT PTO FORM 1449	ATTY. DOCKET NO. 11641/5	SERIAL NO. 09/709,776
	APPLICANTS Kim ENOCH and David DUFFY	
	FILING DATE November 8, 2000	GROUP 1744

U. S. PATENT DOCUMENTS

EXAMINER INITIAL	PATENT NUMBER	PATENT DATE	NAME	CLASS	SUBCLASS	FILING DATE
	4,240,751	December 23, 1980	Linnecke, et al.			
	4,728,591	March 1, 1988	Clark, et al.			
	4,842,633	June 27, 1989	Kuribayashi, et al.			
	4,999,489	March 12, 1991	Huggins			
	5,079,600	January 7, 1992	Schnur, et al.			
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	5,510,481	April 23, 1996	Bednarski, et al.			
	5,512,131	April 30, 1996	Kumar, et al.			
	5,599,695	February 4, 1997	Pease, et al.			
	5,679,310	October 21, 1997	Manns			
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	5,719,060	February 17, 1998	Hutchens, et al.			
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EXAMINER INITIAL	DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUBCLASS	TRANSLATION	
						YES	NO
	WO 98/36827	August 27, 1998	PCT				

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EXAMINER INITIAL	AUTHOR, TITLE, DATE, PERTINENT PAGES, ETC.

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	George B. Sigal et al., "Using Surface Plasmon Resonance Spectroscopy To Measure the Association of Detergents with Self-Assembled Monolayers of Hexadecanethiolate on Gold", Langmuir, 1997, 13, pp. 2749-2755
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	George B. Sigal et al., "A Self-Assembled Monolayer for the Binding and Study of Histidine-Tagged Proteins by Surface Plasmon Resonance", Anal. Chem., 1996, 68, 490-497
	Rebecca J. Jackman et al., "Using Elastomeric Membranes as Dry Resists and for Dry Lift-Off", Langmuir, 1999, Vol. 15, pp. 2973-2984
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INFORMATION DISCLOSURE STATEMENT BY APPLICANT PTO FORM 1449	ATTY. DOCKET NO. 11641/5	SERIAL NO. 09/709,776
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U. S. PATENT DOCUMENTS

EXAMINER INITIAL	PATENT NUMBER	PATENT DATE	NAME	CLASS	SUBCLASS	FILING DATE*

FOREIGN PATENT DOCUMENTS

EXAMINER INITIAL	DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUBCLASS	TRANSLATION	
						YES	NO

* - Copy of the search report attached

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	M. Saleemuddin, "Bioaffinity Based Immobilization of Enzymes", Advances in Biochemical Engineering/Biotechnology, 1999, Vol. 64, pp. 204-226
	D.W. Branch et al., "Microstamp patterns of biomolecules for high-resolution neuronal networks", Medical & Biological Engineering & Computing, 1998, Vol. 36, pp. 135-141
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	Rebecca J. Jackman et al., "Fabricating Large Arrays of Microwells with Arbitrary Dimensions and Filling Them Using Discontinuous Dewetting", Anal. Chem., 1998, 2280-2287
	Andre Bernard et al., "Printing Patterns of Proteins", Langmuir, April 28, 1998, Vol. 14, No. 9, pp. 2226-2228
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SUPPLEMENTAL INFORMATION DISCLOSURE STATEMENT BY APPLICANT PTO FORM 1449	ATTY. DOCKET NO. 11641/5	SERIAL NO. 09/709,776
	APPLICANT Enoch KIM and David DUFFY	
	FILING DATE November 8, 2002	GROUP 1744

U. S. PATENT DOCUMENTS

EXAMINER INITIAL	PATENT NUMBER	PATENT DATE	NAME	CLASS	SUBCLASS	FILING DATE
	4,802,951*	07 February 1989	Clark et al.			
	5,599,695*	04 February 1997	Pease et al.			
	5,512,131*	30 April 1996	Kumar et al.			

* - Copy of the search report attached

FOREIGN PATENT DOCUMENTS

EXAMINER INITIAL	DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUBCLASS	TRANSLATION	
						YES	NO

OTHER DOCUMENTS

EXAMINER INITIAL		AUTHOR, TITLE, DATE, PERTINENT PAGES, ETC.

EXAMINER	DATE CONSIDERED
EXAMINER: Initial if citation considered, whether or not citation is in conformance with M.P.E.P. 609; draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.	



PTO Form 1449 SUPPLEMENTAL INFORMATION DISCLOSURE STATEMENT BY APPLICANT Page 1/1	ATTY. DOCKET NO. 11641/86	SERIAL NO. 10/241,445
	APPLICANT Enoch KIM et al.	
	FILING DATE September 12, 2002	GROUP 1744

U. S. PATENT DOCUMENTS

EXAMINER INITIAL	PATENT NUMBER	PATENT DATE (MM/DD/YY)	NAME	CLASS	SUBCLASS	FILING DATE*
	5,302,515 A	April 12, 1994	Goodwin, Jr.			
	5,422,270 A	June 6, 1995	Caspi			
	5,460,945 A	October 24, 1995	Springer et al.			

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EXAMINER INITIAL	DOCUMENT NUMBER	DATE (MM/DD/YY)	COUNTRY	CLASS	SUBCLASS	TRANSLATION	
						YES	NO

* English Abstract

** English comments provided on cover sheet.

OTHER DOCUMENTS

EXAMINER INITIAL	AUTHOR, TITLE, DATE, PERTINENT PAGES, ETC.
	International Search Report, International Application No. PCT/US03/12764, dated August 8, 2003 (3 pages)

EXAMINER	DATE CONSIDERED
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EXAMINER INITIAL	DOCUMENT NUMBER	DATE (MM/DD/YY)	COUNTRY	CLASS	SUBCLASS	TRANSLATION	
						YES	NO

* English Abstract

** English comments provided on cover sheet.

OTHER DOCUMENTS

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		Michael B. Lawrence et al., "Leukocytes Roll on a Selectin at Physiologic Flow Rates: Distinction from and Prerequisite for Adhesion through Integrins", Cell (1991) 65:859-873
		Peter Marschel et al., "Control of Fluid Shear Response in Circulating Leukocytes by Integrins", Annals of Biomedical Engineering (2002) 30:333-343
		Monica T. Hinds et al., "Local hemodynamics affect monocytic cell adhesion to a three-dimensional flow model coated with E-selectin", Journal of Biomechanics (2001) 34:95-103
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EXAMINER INITIAL	PATENT/ PUBLICATION NUMBER	PATENT DATE	NAME	CLASS	SUBCLASS	FILING DATE*
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* - If pertinent



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	APPLICANT Enoch KIM et al.	
	FILING DATE September 12, 2002	GROUP 1744

FOREIGN PATENT DOCUMENTS

EXAMINER INITIAL	DOCUMENT NUMBER	DATE*	COUNTRY	CLASS	SUBCLASS	TRANSLATION	
						YES	NO
	WO 02/03062	10 January 2002	GB				
	WO 93/06835	15 April 1993	US				
	WO 93/17033	2 September 1993	US				
	WO 98/52691	26 November 1998	CA				
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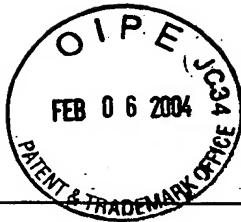
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	Jackman <i>et al.</i> , "Using Elastomeric Membranes as Dry Resists and for Dry Lift-Off", <i>Langmuir</i> 1999, vol. 15, Pgs. 2973-2984
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	Alam <i>et al.</i> , "Capillary Condensation and Desorption of Binary Mixtures of N ₂ -Ar Confined in a Mesoporous Medium", <i>Langmuir</i> , vol. 16, no. 20, pgs. 7551-7553 (2000)
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Form 1449 INFORMATION DISCLOSURE STATEMENT BY APPLICANT Page 3/3	ATTY. DOCKET NO. 11641/86	SERIAL NO. 10/241,455
	APPLICANT Enoch KIM et al.	
	FILING DATE September 12, 2002	GROUP 1744

EXAMINER INITIAL	AUTHOR, TITLE, DATE, PERTINENT PAGES, ETC.
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	Duffy <i>et al.</i> , "Patterning Electroluminescent Materials with Feature Sizes as Small as μm Using Elastomeric Membranes as masks for Dry Lift-Off", Advanced Matters, vol. 11, no. 7, pgs. 546-552 (1999)
	Zipfel <i>et al.</i> , "Shear-Induced Formation of Multilamellar Vesicles ("Onions") in Block Copolymers", Langmuir, vol. 15, no. 8, pgs. 2600-2602 (1999)
	Keown <i>et al.</i> , "Methods of Introducing DNA into Mammalian Cells, Methods in Enzymology", vol. 185, pgs.527-537 (1990)
	Capecchi, "Tapping te cellular telephone", Nature, vol. 344, pg. 105 (1990)
	Koller <i>et al.</i> , "Normal Development of Mice Deficient in $\beta_2\text{M}$, MHC Class I Proteins, and CD8^+ T Cells", Science, vol. 248, pgs. 1227-1230 (1990)
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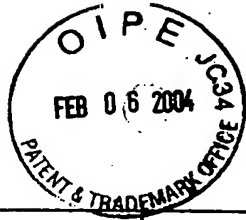
INFORMATION DISCLOSURE STATEMENT BY APPLICANT PTO FORM 1449	ATTY. DOCKET NO. 11641/130	SERIAL NO. 10/206,112
	APPLICANTS Enoch KIM, <i>et al.</i>	
	FILING DATE July 29, 2002	GROUP To be Assigned

U. S. PATENT DOCUMENTS

EXAMINER INITIAL	PATENT NUMBER	PATENT DATE	NAME	CLASS	SUBCLASS	FILING DATE
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	4,999,489	March 12, 1991	Huggins			
	5,079,600	January 7, 1992	Schnur, et al.			
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	5,324,591	June 28, 1994	Georger, Jr. et al.			
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	5,679,310	October 21, 1997	Manns			
	5,691,018	November 25, 1999	Kelley, et al.			
	5,719,060	February 17, 1998	Hutchens, et al.			
	5,776,748	July 7, 1998	Singhvi, et al.			
	5,856,082	January 5, 1999	Aebersold et al.			
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	5,942,443	August 24, 1999	Parce, et al.			
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	4,789,601	December 6, 1988	Banes			
	4,831,869	May 23, 1989	Fowler			
	4,912,057	March 27, 1990	Guirguis			
	5,072,382	December 10, 1981	Kamentsky			
	5,120,662	June 9, 1992	Chan et al.			
	5,224,058	June 29, 1993	Mickaels et al.			
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	5,312,731	May 17, 1994	Engstrom			
	5,330,911	July 19, 1994	Hubbell et al.			
	5,424,213	June 13, 1995	Mougin			
	5,427,663	June 27, 1995	Austin			
	5,470,739	November 28, 1995	Akaike et al.			
	5,492,890	February 20, 1996	Ginsberg et al.			
	5,514,501	May 7, 1996	Tarlov			
	5,573,942	November 12, 1996	Miyamoto			
	5,591,627	January 7, 1997	Miyamoto			
	5,602,029	February 11, 1997	Miyamoto			
	5,721,131	February 24, 1998	Rudolph et al.			
	5,744,366	April 28, 1998	Kricka et al.			
	5,828,776	October 27, 1998	Lee et al.			
	5,840,256	November 24, 1998	Demers et al.			
	5,858,801	January 12, 1999	Brizzolara			
	5,866,321	February 2, 1999	Matsue			
	5,935,850	August 10, 1999	Clark et al.			
	5,986,835	November 16, 1999	Dunlay et al.			
	6,008,010	December 28, 1999	Greenberger et al.			
	6,037,171	March 14, 2000	Larsson			
	6,039,897	March 21, 2000	Lochhead			
	6,100,043	August 8, 2000	Bridgham et al.			
	6,103,479	August 15, 2000	Taylor			
	6,127,129	October 3, 2000	Corn et al.			
	6,133,030	October 17, 2000	Bhatia et al.			



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	6,143,247	November 7, 2000	Sheepard Jr, et al.			
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	6,329,164	December 11, 2001	Goodwin Jr, et al.			
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INFORMATION DISCLOSURE STATEMENT BY APPLICANT PTO FORM 1449	ATTY. DOCKET NO. 11641/128	SERIAL NO. 10/206/111
	APPLICANTS Enoch KIM, et al	
	FILING DATE July 29, 2002	GROUP To be Assigned

U. S. PATENT DOCUMENTS

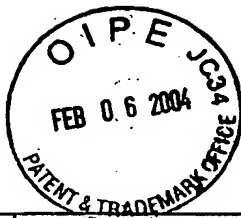
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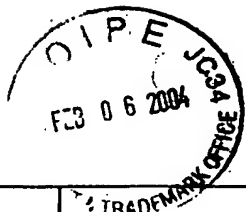
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						YES	NO
	EP 1 199 354 A1	March 4, 2002	EP				
	US 2002 0012953	January 31, 2002	PCT				
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